AUTHOR'S SOFTWARE MARKETING STUDY

INPUT

ABOUT INPUT

Formed in 1974, INPUT has rapidly grown to become a leading business consulting company in the information processing industry. It specializes in market research, planning services, and sp[...] of computer, and communications, and office [...]

The company carries out cc[...] dors and users in the industry. Our staff analyze[...] us data derived from this research, based on the [...] This information is presented concisely and u[...] itions. Useful recommendations and acces[...] t relations.

INPUT's professional staf[...] erience in the information processing inc[...] experience in operations, marketing, or [...] JT with unique strengths attested to by th[...] of the world's largest companies.

OFFICES

UNITED STATES

2180 Sand Hill Road
Suite 320
Menlo Park, CA 94025
(415) 854-3422

15 Bond Street
Great Neck, NY 11021
(516) 482-4170

JAPAN

Overseas Data Service Company, Ltd.
Shugetsu Building, No. 12-7 Kita Aoyama
3-Chome Minato-Ku
Tokyo, 107
Japan
(03) 400-7090

EUROPE

67A High Street
Sutton SM1 1DT
England

REPORT

TO

GENERAL ELECTRIC - INFORMATION
SERVICES BUSINESS DIVISION

ON

AUTHOR'S SOFTWARE MARKETING STUDY

JULY 20, 1977

INPUT
2180 SAND HILL ROAD
MENLO PARK, CA 94025

INPUT

I. INTRODUCTION

GENERAL ELECTRIC - INFORMATION SERVICES BUSINESS DIVISION

REPORT ON

AUTHOR'S SOFTWARE MARKETING STUDY

TABLE OF CONTENTS

INPUT

Digitized by the Internet Archive
in 2014

INPUT

INPUT

LIST OF EXHIBITS

INPUT

I   INTRODUCTION

A.   SCOPE OF RESEARCH

- This study was carried out in July 1977 for General Electric Information Systems by INPUT.

- The purpose of the study was to analyze existing and potential author relationships in order to determine how GEIS may expand its base of business and be more competitive in obtaining author-related business.

- The study was based on interviews with current authors, potential authors and remote computing vendors.

  - 19 current authors

  - 22 potential authors

  - __7 remote computing vendors

    48 TOTAL INTERVIEWS

B.   INTERVIEW SAMPLE

1.   CURRENT AUTHORS AND POTENTIAL AUTHORS

- Exhibit I-1 shows the interview distribution by type of organiza-

INPUT

EXHIBIT I-1

INTERVIEW DISTRIBUTION BY TYPE OF ORGANIZATION

SOFTWARE HOUSE 59%	SPECIALIZED PROCESSORS 17%	CONSULTANTS 12%	EDUCATIONAL & OTHER 12%
APPLICATIONS SOFTWARE	FLORIDA SOFTWARE	DIALOG	UNIVERSITY OF MICHIGAN
SIGMA DATA COMPUTING	SERVICES	MECHANICS	PRINCETON UNIVERSITY
BOOLE & BABBAGE	TRES COMPUTER	RESEARCH CORP.	UNIVERSITY OF OKLAHOMA
INTERSTATE BUSINESS	SYSTEMS	TECHNICAL	UCLA
SERVICES, INC.	WESTERN INFORMATION	ECONOMICS	FLORDIA POWER CORPORATION
SYSTONETICS	SCIENCES	ENCOMP	
COMPUTER DATA	COGNA SYSTEMS	SYSTEMS	
SYSTEMS	MANAGEMENT DECISIONS	BATTELLE	
MANAGEMENT	SYSTEMS	INSTITUTE	
DECISIONS DEVELOPMENT	AAA TECHNOLOGY &		
INTERNATIONAL MANAGEMENT	SPECIALISTS		
SYSTEMS			
TURNKEY SYSTEMS			
DATACHRON CORPORATION			
CINCOM SYSTEMS			
CAMBRIDGE			
COMPUTER ASSOCIATES			
CORE & CODE, INC.			
COMPUCON			
EXECUCOM SYSTEMS			
ABC MANAGEMENT SYSTEMS			
SOFTWARE INTERNATIONAL			
DYLAKAR SOFTWARE			
SYSTEMS			
CAPEX CORPORATION			
PANOSOPHIC SYSTEMS			
INFORMATICS			
ASK COMPUTER SERVICE			
ENTELEK			

INPUT

tion for the 41 potential and current authors.

•   Exhibit I-2 shows the interview distribution by type of software for current and potential authors.

•   The number of software packages available from current authors and potential authors interviewed was:

- 1 package 29% (12) respondents

- 2 packages 19% (8) respondents

- 3-5 packages 19% (8) respondents

- 7-10 packages 17% (7) respondents

- 15-25 packages 12% (5) respondents

- 100+ packages 4% (2) respondents

•   Computer hardware requirements of the packages available from the current and potential authors:

- 26 IBM

- 9 Most large mainframes

- 5 Univac

- 5 DEC

- 4 CDC

- 3 Burroughs

- 1 Hewlett Packard

- 7 Honeywell

•   The most common languages reported were Cobol (15), Fortran (14), and Assembler (11).

•   The majority of the companies (25 of the 41 respondents) reported

-3-

EXHIBIT I-2

INTERVIEW DISTRIBUTION BY TYPE OF SOFTWARE

TOOLS 32%	SYSTEM SOFTWARE 29%	GENERAL APPLICATIONS 29%	MANUFACTURING 10%
DIALOG	INFORMATICS	FLORIDA SOFTWARE SERVICES	ASK COMPUTER SERVICES
UCLA	PANSOPHIC SYSTEMS	AAA TECHNOLOGY & SPECIALISTS	SOFTWARE INTERNATIONAL
GARRETT COMPUTER SYSTEMS	DYLAKOR SOFTWARE SYSTEMS	ENTELEK	COMPUCON
MANAGEMENT DECISIONS SYSTEMS	ABC MANAGEMENT SYSTEMS	TURNKEY SYSTEMS	MANAGEMENT DECISIONS DEVELOPMENT
EXECUCOM SYSTEMS	CAMBRIDGE COMPUTER ASSOCIATES	INTERNATIONAL MANAGEMENT SYSTEMS	
MECHANICS RESEARCH CORPORATION	CINCOM SYSTEMS	COGNA SYSTEMS	
CORE & CODE	DATACHRON CORPORATION	COMPUTER DATA SYSTEMS	
TECHNICAL ECONOMICS	BATTELLE INSTITUTE	SYSTONETICS	
ENCOMP SYSTEMS	INSYTE CORPORATION	WESTERN INFOR- MATION SCIENCES	
PRINCETON UNIVERSITY	BOOLE & BABBAGE	INTERSTATE BUSINESS SERVICES	
UNIVERSITY OF MICHIGAN	SIGMA DATA COMPUTING	TRES COMPUTER SYSTEMS	
CAPEX	APPLICATIONS SOFTWARE	FLORIDA POWER	
UNIVERSITY OF OKLAHOMA			

INPUT

that their software was written with the intention of selling it as a product. The exceptions to this were:

- 9 reported the product(s) were originally developed for in-house use

- 3 reported the product(s) were developed in conjunction with a client

- 2 reported the product(s) were developed to market on a RCS

- 2 reported the product(s) were funded by Federal Government

- Only 4 companies (18%) of the potential authors stated that their products were not available on in-house remote computing systems.

2.   REMOTE COMPUTING VENDORS

- The 7 remote computing vendors interviewed were:

  - Boeing Computer Services

  - Computer Sciences Corporation

  - Comshare

  - McAuto

  - National CSS

  - Optimum Systems

  - Tymshare

3.   QUESTIONNAIRES

- A copy of the questionnaires used for this study appears in Appendix B.

INPUT

- The codes used on the questionnaire to identify the three types of interviews are:

    - SS current authors

    - PS potential authors

    - RC remote computing vendors

II. EXECUTIVE SUMMARY

II   EXECUTIVE SUMMARY

A.   RESULTS OF SURVEY

1.   AUTHORS AND POTENTIAL AUTHORS

●   The 'author market' is highly competitive and will become more so as RCS vendors search for new software to feed their growth. Control of software is a key to market penetration and growth.

●   Author relationships are particularly important to many software companies; indeed, there is a fairly large group of such companies that exist primarily to provide software to RCS vendors.

●   The major attraction of author relationships to many software companies is the wider geographic marketing capabilities of the RCS vendor. This is more important to them than network coverage, although this is a factor.

●   Authors expect:

-    extensive marketing and technical support

-    discounts or free computer time for development

    and modificaiton

-    clear decision-making by the RCS vendor

-    non-exclusive relationships

- Authors have little or no idea of market potential for services based on their products: however, they feel that the growth rates for such services are high, averaging 45% per year.

- There is no major RCS vendor to whom software suppliers would automatically offer their product.

- Suppliers prefer two or three author relationships to get maximum coverage without their vendors losing interest. Many of them currently only have an author relationship with a single vendor and are strongly in favor of expanding these relationships.

- RCS vendors provide little assistance in the initial packaging of a product.

- Very little financial data could be obtained; respondents considered such data would affect their negotiating position with other vendors.

- Authors are often looking for increased revenues from their relationships with RCS vendors in two ways:
  - royalties from the RCS
  - outright sales to in-house groups as a result of exposure through the RCS.

- IBM software is obviously the most used and the most available.

- GEIS does not enjoy a good reputation with its authors. Complaints include:

- no discounts or free computer time

- lack of technical and marketing support

- lack of clear decisions and confusion

over contact points

• There is little or no potential for increased business by re-placing other RCS vendors in present author relationships.

• Most easily obtainable new business is "add-on", from existing authors which are looking for additional relationships for current soft-ware, or new relationships for new software. Over half the current authors had software available for author relationships.

2. RCS VENDORS

• Author relationships are of increasing importance to RCS vendors, which expect to expand the shares of their revenues dependent on them.

• Most RCS vendors want exclusive relationships but that rarely happens in practice.

• Mark-ups over standard use charges for author based services vary widely with the average being about 75%. There is some movement to transaction pricing where possible.

• Typically, author companies receive about two thirds of the mark-up.

• Royalty payments are usually not visible to the end user on invoices.

• There is a trend to organized search capability at the headquarters'

INPUT

level. The inputs from potential users are often very important to an RCS vendor in helping to decide to go after a particular product.

- Most RCS vendors have standard contracts, sometimes varying by type of relationship; however, they are almost always modified.

- Most RCS vendors encourage authors to approach them and have a positive, organized approach to handling them.

- RCS vendors' problems with software suppliers primarily relate to timeliness of support in performing maintenance or enhancements.

3. SOURCES

- There are more potential authors than any one company can handle. The key is to select only those products that are:
    - well documented
    - operate according to specifications
    - come from stable suppliers
    - meet marketing objectives

- Simple direct mail or advertizing in specialist journals will be the easiest ways of initiating contact with organizations such as users or associations.

- Direct contact with software houses, consulting companies and specialized processing companies will be effective.

INPUT

B. RECOMMENDATIONS

- GE must improve its reputation with authors.

- It should be selective with products and support those selected far more.

- A smooth, formal evaluation and decision process should be established: an effective and efficient interface with authors must be established.

- GE should implement a regular, formal communication channel with authors, including those on other networks.

- GE should adopt the following priority schedule in looking for author business:

   1. 'Add-on' business with existing authors, either its own or other vendors.

   2. 'New' business from potential authors, examining first software houses and specialized processors.

   3. 'Replacement' business should not even be considered.

- In the 'Add-on' area GE should track other vendors and become a 'second source' for successful software.

- Exclusive relationships are more easily obtainable with users and perhaps, consulting companies. But these require more support. GE should have a secondary effort to obtain author relationships in these areas by advertizing and direct mail.

● GEIS should offer extensive technical and marketing support for key products.

● GEIS should offer 'free' processing for software development and enhancement when appropriate.

● Small companies which don't have the staff to provide the necessary technical support should be avoided unless they have an exceptional capability. In this case, GE should take the company under its wing, or acquire it.

● In summary, the difficulty in the author business is not in finding and establishing relationships, but in making them successful. GE should not take in more than it can handle in this area. Do not become, as one author stated "a jack-of-all-trades and master of none."

However, it should promote author relationships and have an effective weeding out process, so that it gets the 'good stuff' and not the 'dregs'.

C. SOURCES IDENTIFIED IN THE SURVEY

● The following organizations specifically requested to be identified as a prospect or indicated they were open to negotiations:

Walter Hodge
Director of Marketing
Cambridge Computer Associates
222 Alewife Brook Parkway
Cambridge, MA 02138

INPUT

Steve Kassay   (SS13)
Dylakor Software Systems, Inc.
16255 Venture Blvd.
Encino, CA 91436

Jay Latsona   (SS18)
Sales Manager
ASK Computer Services Inc.
230 Distel Drive
Los Altos, CA 969-4442

Dr. Amber Rao   (SS19)
DIALOG, Inc.
233 Broadway, Suite 809
New York, NY 10007

Dr. Daniel Teichroew   (PS01)
University of Michigan
231 West Engineering
Ann Arbor, MI 48109

Jerry Scheer   (PS04)
President
Sigma Data Computing
12730 Twinbrook Parkway
Rockville, MD 20852

Harold Went   (PS07)
Vice President Marketing
Interstate Business Services, Inc.
P. O. Box 1028
Mansfield, OH 44901

Ronald Buhler   (PS08)
Princeton University Computer Center
87 Prospect Avenue
Princeton, NJ 08540

Philip Morgan   (PS10)
Western Information Sciences, Inc.
2710 Sand Hill Road, Suite 125
Menlo Park, CA 94025

Charles McCoy   (PS09)
Vice President
INSYTE Corporation
3702 Rawlins Avenue, Suite 325
Dallas, TX 75219

INPUT

Walt Halverson   (PS11)
Systonetics
600 N. Euclid Street, Suite 70
Anaheim, CA   92801

Merle A Coe   (PS12)
Vice President
Computer Data Systems
2315 Wisconsin Avenue, Suite 200W
Bethesda, MD   20014

David Colombo   (PS13)
Battelle Columbus Laboratory
Columbus, OH   43201

Robert Melworm,   (PS14)
President
Encomp Systems
50 Union Avenue
Irvington, NJ   07111

George Chaing   (PS15)
Marketing Manager
Cogna Systems Inc.
222 N. Dearborn Street
Chicago, IL   60601

John Goetz   (PS17)
Vice President
International Management
Systems Corporation
4676 Admiralty Way
Marina Del Rey, CA   90291

Dennis Sisco   (PS18)
Vice President
Turnkey Systems, Inc.
1111 East Avenue
Norwalk, CT   06851

Jack Martin   (PS19)
Vice President
Data Chron Corporation
174 Fifth Avenue
New York, NY   10010

INPUT

Additional potential sources identified but unable to interview:

Association of American Railroads

    Dr. V. S. Gorg   312-567-3596

    Mr. J. Sims   312-567-3604

The association has several sets of train and track and structural dynamics programs all in Fortran. They were created in part by government funds and can be leased by RCS vendors. Some are in Chicago, some are in Washington, D.C.

The National Real Estate Exchange, San Francisco, etc.

    Dr. Ronald S. Graybeal

They have a series of information storage and retrieval, appraisal and value determination programs in Fortran which operate in RJE or interactive mode which could be leased to an RCS vendor.

INPUT

III. AUTHOR ANALYSIS

III   AUTHOR ANALYSIS

A.   IMPORTANCE OF AUTHOR RELATIONSHIPS

●   As shown in Exhibit III-1, current authors attach far more im-
portance to relationships with RCS vendors then potential authors.

●   Two thirds of all respondents who considered such a relationship
important, already have author relationships. Thus, although the method
is well accepted and there is fairly high penetration of potential
suppliers, there are still many opportunities for RCS vendors.

There is a group of companies whose main business depends on
author relationships. To these companies such relationships are vital;
typical respondent comments were 'without them (RCS vendors) we wouldn't
have the same business' and 'we would go out of business without them'.
These companies are fewer in number and usually smaller than general
software companies.

●   To small general software companies, author relationships are often
very important because they provide wider access to markets. However,
as these companies grow and achieve their own national and international
sales/support capabilities, author relationships can decrease somewhat
in importance. Also they become far more demanding in the terms and
conditions of contracts; CAPEX Corporation is a good example of such a
company.

EXHIBIT III-1

IMPORTANCE OF AUTHOR RELATIONSHIPS

INPUT

⊠ – AUTHOR

☐ – POTENTIAL
AUTHOR

NUMBER OF RESPONDENTS

15

10

5

8

2

8

7

2

12

VERY
IMPORTANT

IMPORTANT

NOT
IMPORTANT

INPUT
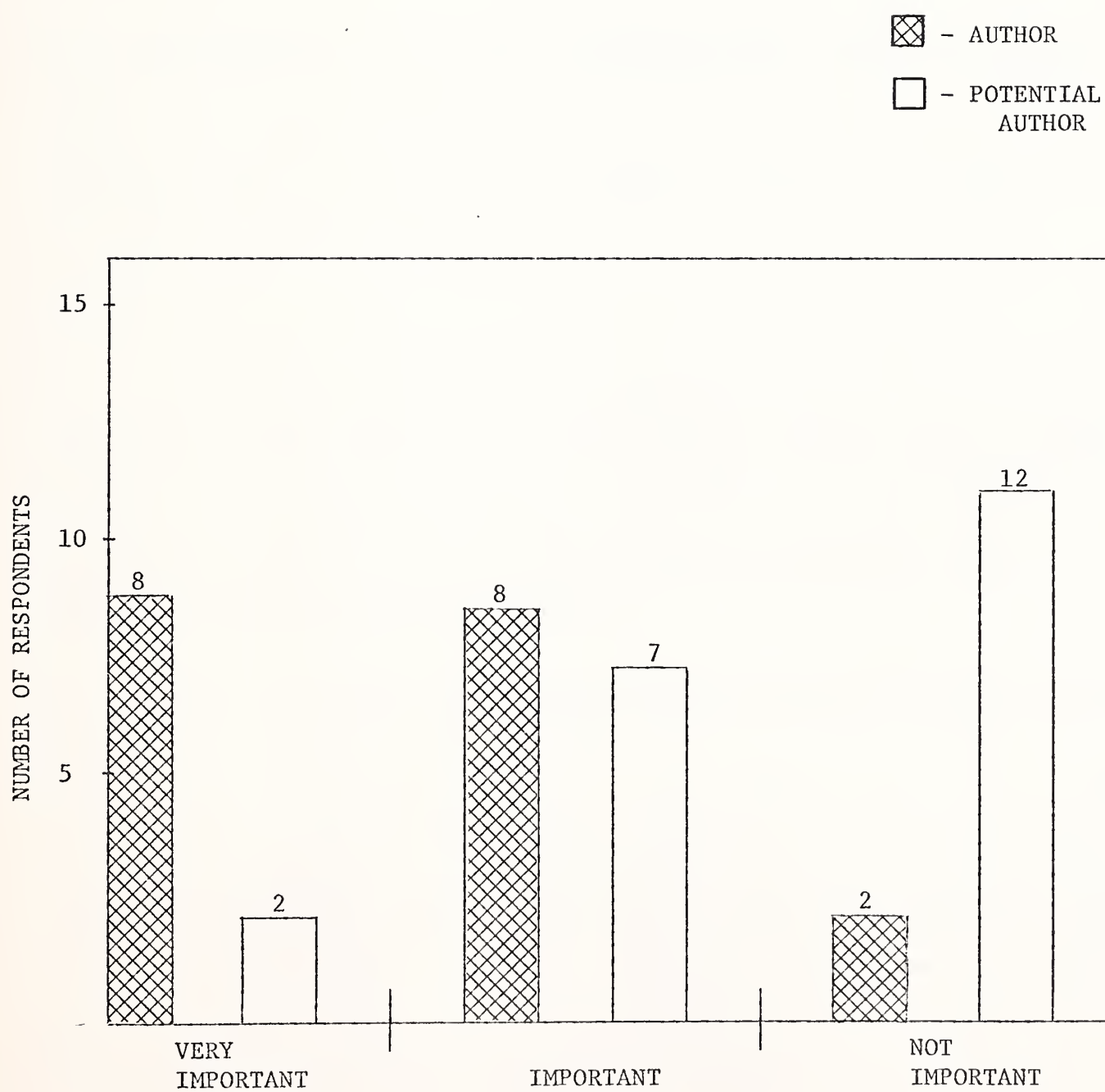
● For potential authors, the major attraction of such relationships is definitely the wider marketing capabilities of the RCS vendors. For most of those who don't consider author relationships important, typical response is 'We have done well without them (RCS vendors)'. Also, many software companies do not have products oriented to remote computing use.

● Two thirds of all respondents considered that author relationships will provide an increasing share of their business, as shown in increasing share of their business, as shown in EXHIBIT III-2. Over half the potential authors expect some form of author relationship to develop.

● Few respondents with existing relationships were able to estimate the current market potential in dollars for RCS services based on them could, or were prepared to, estimate the number of potential uses and, as shown in Exhibit III-3, the estimates given were usually only for immediate prospects for their services.

● However, the growth rates authors expect are high, averaging about 45% per year over the next two years.

● Potential authors also did not have much sense of their potential markets through RCS. However; they were prepared to put some 'ball-park' figures together, as shown in Exhibit III-4 these must be viewed as self-serving because in many cases they are trying to establish author relationships. They are also slightly more optimistic in their market

EXHIBIT III-2

WILL AUTHOR RELATIONSHIPS PROVIDE AN

INCREASING SHARE OF BUSINESS

⊠ – AUTHORS

☐ – POTENTIAL
AUTHORS

INPUT
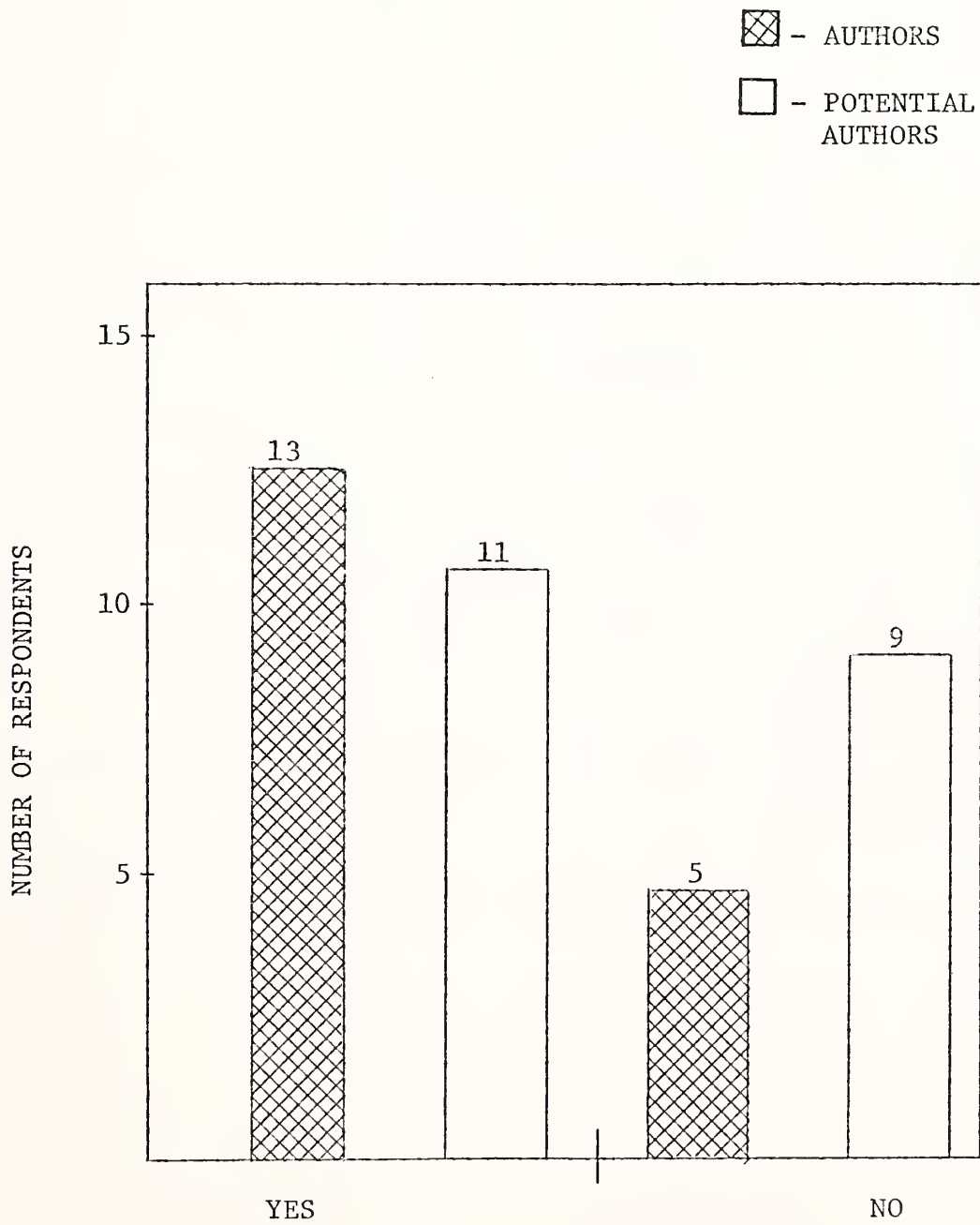
EXHIBIT III-3

POTENTIAL USERS & GROWTH RATE AUTHOR RESPONSES

TYPE OF PRODUCT	NUMBER OF USERS	AMOUNT PAY ($MONTH)	TOTAL MARKET	GROWTH RATE	
				77-78	78-9
STATISTICAL REPORTING/MKT RESEARCH	25	$200	"5 FIG- URE RANGE"	30%	—
FINANCIAL LANGUAGE	250	—	—	30	30
STRUCTURAL ENGINEERING	200-300	—	—	15-20	—
MANUFACTURING	100	—	—	100	100
ENGINEERING PROGRAM	100-150	—	—	10-20	10-20
REPORT WRITER	100	$1,000	—	—	—
FIN. & ECON. MODELING	"HUNDREDS"	—	—	50-100	50
PETROLEUM APPLICATIONS	250	$400-600	—	30	30
DATA BASES	800-1,000	—	—	100	100
FINANCIAL LANGUAGE	20,000	$500-10,000	ACTUAL 1977 REVS: $1 MILLION	20-30	20-30
REPORT GENERATOR	400-500	$100	$500,000- $1 MILLION	30-50	30-50
FILE MANAGEMENT	—	—	—	10-20	10-20

EXHIBIT III-4

POTENTIAL USERS AND GROWTH RATE

POTENTIAL AUTHORS

TYPE OF PRODUCT	NUMBER OF USERS	AMOUNT PAID (1 MONTH)	TOTAL TOTAL MARKET	GROWTH RATE	
				77-78	78-79
DBMS	20,000	$30,000 (one time charge)	$500 million	50	150
PERSONNEL PACKAGES	4,000	——	100 MILLION	50	50
ACCOUNTING	5,000	2,500	——	20	—
INFORMATION RETRIEVAL	1,000	50,000 one time charge	50 MILLION	—	—
TAX MANAGEMENT	5,000	——	10 MILLION	—	—
ANALYTICAL/ECONOMIC MODELS	500	——	10 MILLION	25	25
DBMS	1,600	1,000	30 MILLION	——	——
SYSTEM SOFTWARE	8,000	500	50 MILLION	100	100
CREDIT UNION	30,000	——	50 MILLION	40	40
ACCOUNTING	——	——	——	50	50
MANUFACTURING	——	——	——	25	30

growth estimates (average 54% per year as opposed to 45%).

- Particular areas of high potential identified by respondents are:
    - Financial analysis and planning tools.
    - File management/report generaters/DBMS.
    - Credit union processing
    - Manufacturing

B.   RCS VENDOR SELECTION CHARACTERISTICS

- As shown in Exhibit III-5, 19 RCS vendors were mentioned by respondents as users or potential users of their software under author relationships. There is no major vendor to whom software companies turn automatically. (Note: GEIS figures are biased because INPUT actively sought some of its authors).

- Most respondents have or are considering several RCS vendors. The average number of RCS vendors used by a software company who has author relationships is two, but half the existing authors work with only one RCS vendor, as shown in Exhibit III-6. However, only 3 of these 9 'sole-source' authors have exclusive contracts with their RCS vendor.

- Of potential author respondents, 77% have considered or are considering establishing such a relationship.

- In the case of existing authors, relationships were established in the following ways:

EXHIBIT III-5

RCS VENDORS CITED

COMPANY NAME	NUMBER OF RESPONDENTS	
	WITH AUTHOR RELATIONSHIPS	CONSIDERING AUTHOR RELATIONSHIPS
GENERAL ELECTRIC	7	1
COMPUTER SCIENCES	2	6
CONTROL DATA/SBC	4	2
NATIONAL CSS	2	2
McAUTO	3	1
TYMSHARE	4	
BOEING	4	1
UNITED COMPUTING	3	
OPTIMUM SYSTEMS	2	
COMPUSERV		2
ITEL MULTIPLE ACCESS	2	
FIRST DATA CORPORATION	1	
ON-LINE SYSTEMS		1
INTERACTIVE SCIENCE	1	
UNIVERSITY COMPUTING	1	
INFORMATICS	1	
LITTON MELLONICS	1	
COMSHARE		1
DIGITAL EQUIPMENT		1

EXHIBIT III-6

NUMBER OF RCS VENDORS USED

BY AUTHORS

INPUT
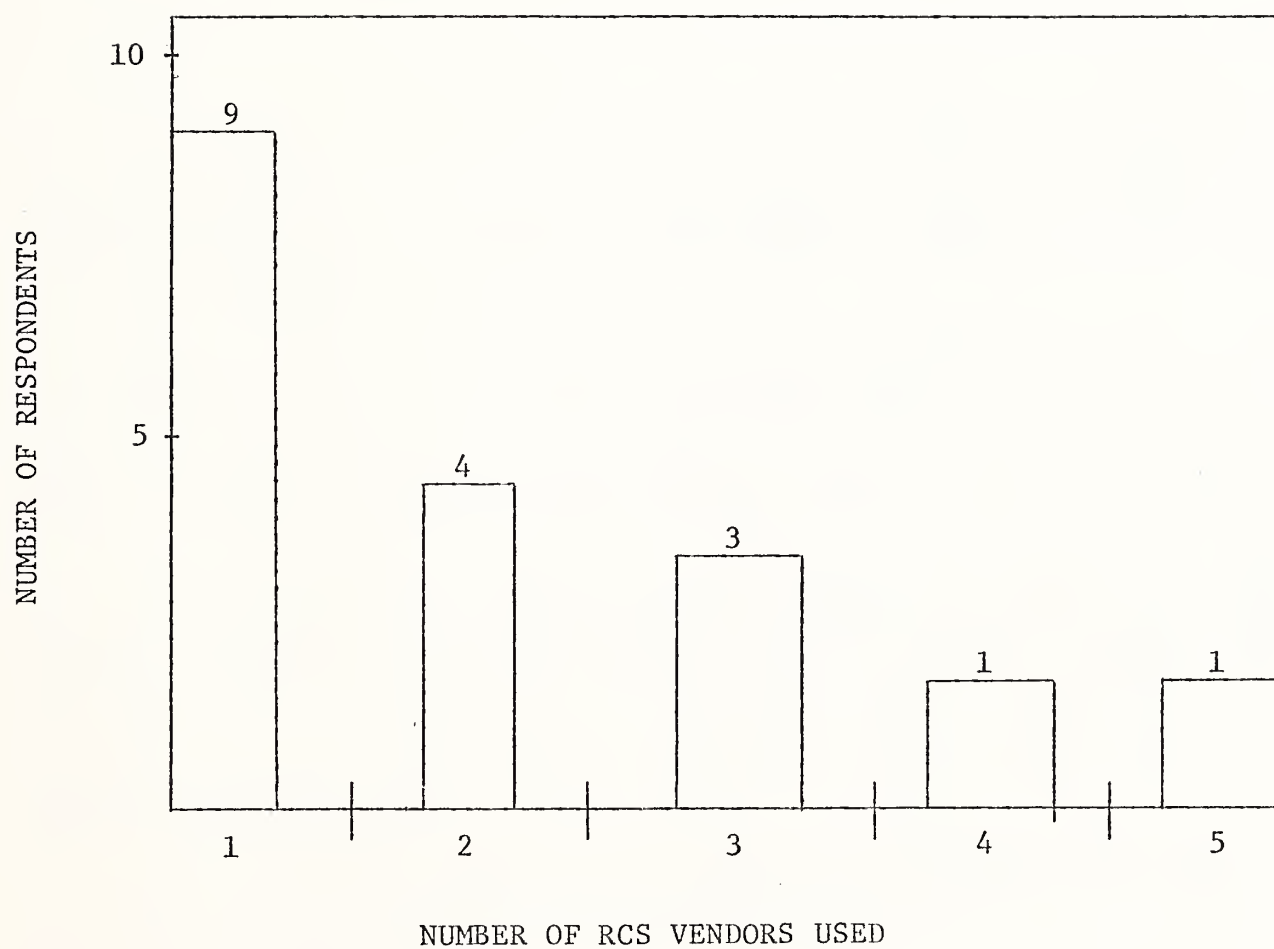
- 38% (8) reported that the RCS vendor con-

tacted the supplier

- 29% (6) reported that the author contacted

the RCS vendor

- 19% (4) reported contact was made by

another means

- 14% (3) didn't know how contact was

made

● For potential authors that knew of such a consideration, by far

the majority were approached by the RCS vendor, normally because a user

had requested the product.

● INPUT expects that contacts initiated by RCS vendors will account

for the majority of author relationships in the future.

● Potential authors considered the most important reasons for selec-

tion of an RCS vendor were the extent of the RCS vendors network, hard-

ware/software environment, nature of its uses base, and ability to

market the product well.

● Those respondents who had not considered an author relationship

gave the following reasons for this:

- Not convinced RCS vendors have marketing expertise

- Marketing emphasis has been on selling to in-house users

users

- Lack of time to investigate

-25-

●   Of the six respondents who had tried but were unsuccessful in
establishing an author relationship;

-    3 cited unsatisfactory terms and conditions

-    2 felt their products were not strong enough

-    1 did not have software control

C.   CONTRACTUAL DETAILS

1.   BUSINESS ARRANGEMENTS

●   The majority of author respondents have non-exclusive relation-
ships with their RCS vendors:

-    57% (12) have non-exclusive arrangements

-    19% (4) have exclusive arrangements

-    10% (2) vendors purchased package and
pay monthly service fee

-    10% (2) vendors purchased package and
do not pay a monthly fee

-    4% (1) vendors purchased package and pay
royalty fee

●   Half the author respondents had no restrictions in their agreement.
Of the others, no pattern emerged; several respondents regarded their
restrictions as confidential.

●   The length of existing author relationships was somewhat surprising,
with two thirds of the respondents reporting agreements in place for

INPUT

over 4 years, as shown in Exhibit III-7. This is somewhat biased since INPUT actively sought companies likely to have, or known to have, author relationships.

● Most author relationships are open-ended with no definite contract period. The following contract lengths were reported:

- Indefinite, 7 respondents

- 1 year, 3 respondents

- 2-3 years, 3 respondents

- 4-5 years, 1 respondent

In some cases, there is an initial contract period, followed by, as one respondent said, "evergreen clauses".

2. RESOURCES PROVIDED

● 58% (11) of the respondents stated that the RCS vendor did provide some resources to them. Typical resources were:

- Discount on computer time

- Free computer time for maintenance/product enhancement

- RCS vendor provides technical and marketing support

● Only 37% (7) reported that the RCS vendor initially provided any assistance in producing or packaging the final product. Almost all

EXHIBIT III-7

INPUT

LENGTH OF RELATIONSHIP BETWEEN

CURRENT AUTHORS & RCS VENDORS

LENGTH OF RELATIONSHIP (YEARS)

INPUT

respondents (17) reported that the role of the RCS vendor had not changed.

3.   FINANCIAL CHARACTERISTICS

●   Respondents were very loath to give any information on financial arrangements with RCS vendors. They generally felt that such information would hurt their bargaining position should they negotiate with other vendors.

●   The method used to price the services based on author software was most often a mark-up on standard computer usage.

●   Rarely does the software supplier determine the price of the services to the users;

    -    8 respondents had joint determination of price with the RCS vendor (one RCS vendor considered this to be potential 'price fixing')

    -    8 respondents reported the RCS vendor established the price alone

    -    2 respondents reported they established the price (brokers)

●   The two respondents which had a 'broker' arrangement were also responsible for billing the users; otherwise the RCS vendors were responsible and also paid the software supplier on a monthly basis. The two 'brokers' were also the only respondents who thought complete control was the ideas relationship.

-29-

●   Of 14 authors responding to the question, 11 reported that the
royalty they received was not visible to the user.

●   Two thirds (10) of the respondents stated there was no front-end
payment nor were resources made available at the front-end by the RCS
vendor.

4.   RESPONSIBLITIES

●   As shown in Exhibit III-8 documentation is almost invariably
performed by the software supplier.   Rather surprisingly respondents
reported in almost 50% of the cases that they were responsible for pre-
paring marketing literature, and in many cases they also printed it.

●   One author stated that RCS vendors should be very 'leery' of any
suppliers that did not have,

   -     marketing literature,

   -     complete documentation, and a

   -     marketing plan.

●   The major differences between current and potential authors in
responsibilities:

   -     potential authors expect the RCS vendor to
provide more customer support

   -     potential authors wish to do far more on
a joint basis

   -     potential authors are less willing to

INPUT

· EXHIBIT III-8

RESPONSIBILITIES FOR MARKETING

AND TECHNICAL SUPPORT

	CURRENT AUTHORS			POTENTIAL AUTHORS		
	AUTHOR	RCS VENDOR	BOTH/ JOINT	AUTHOR	RCS VENDOR	BOTH/ JOINT
MARKETING	2	12	4		12	9
CUSTOMER SUPPORT	5	8	5	4	12	5
PREPARING MARKETING LITERATURE	9	4	6	5	3	13
PRINTING MARKETING LITERATURE	8	10	1	3	11	7
DOCUMENTATION	17		2	15		6
TRAINING (USERS)	5	6	7	4	12	5

assume full responsibility for marketing

and supporting their product

● In almost every case the current supplier provides the software

maintenance and all of them prefer this arrangement. Only one potential

supplier wished the RCS vendor to provide it, and one preferred it to

be handled jointly.

5. PREFERENCES

● Both current and potential authors agreed on the importance of

continued ownership of the program; all agreed that it was very im-

portant. In addition, two thirds of current authors would not consider

a buy out clause to their contracts.

● In several cases, the base of the company was ownership of the

programs, thus purchasing the software was equivalent to purchasing

the company.

● As shown in Exhibit III-9, author respondents strongly prefer non-

exclusive license arrangements, although several other arrangements are

license arrangement with total control going to one RCS vendor; this is

the next most thing to a 'buyout' in their eyes.

D. EVALUATION OF RELATIONSHIPS

1. EXPECTATION OF AUTHORS

EXHIBIT III-9

INPUT

LICENSE PREFERENCES OF POTENTIAL AUTHORS

LICENSE	PREFERRED	ACCEPTABLE	UNACCEPTABLE
FIXED FEE VS. ROYALTIES BASED ON USAGE		11	10
EXCLUSIVE LICENSE - SUPPLIER CAN'T SELL IN-HOUSE		5	16
EXCLUSIVE LICENSE - SUPPLIER CAN SELL IN-HOUSE	1	17	3
NON-EXCLUSIVE LICENSE	13	7	1
BROKERAGE		8	13

INPUT

● Authors generally expect additional revenues with little or no additional investment, as shown in Exhibit III-10. This is achieved through sales of the remote computing service based on the software, and also direct software sales resulting from the additional exposure of users to the product(s). This secondary impact is an important lever for RCS vendors.

● Ability to gain maximum income was the reason 68% (15) of the potential authors would consider an author relationship with a particular RCS vendor. Other reasons to consider a relationship were:

  - generate exposure of their product

  - need marketing support, with several desiring international marketing support

● Almost half (47%) of author respondents considered that their experience had matched their expectations. About a third considered it had not; mainly because revenues had not been as large as planned, or marketing and technical support had not met expectations.

2. MARKET PENETRATION

● Only 16% (3) author respondents considered the market penetration achieved by the RCS vendor in their area was reasonable. Almost half (9) respondents felt it was "very small", while the others simply did not know, or care in three cases where royalty payments were not involved.

● Half the respondents had no idea how the penetration could be im-

EXHIBIT III-10

AUTHOR EXPECTATION FROM RELATIONSHIPS

INPUT
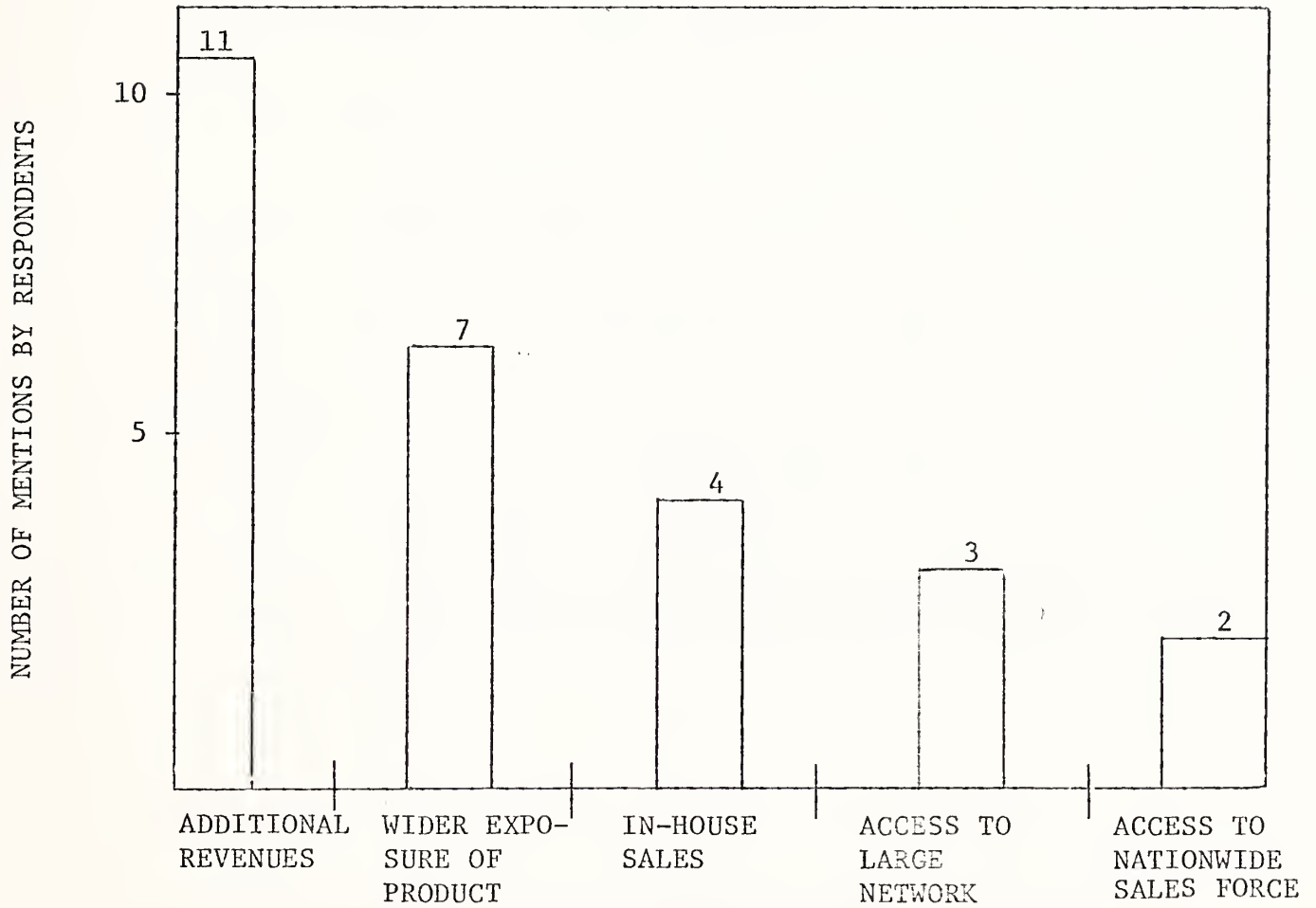
proved.   Others had various suggestions:

- expand marketing by RCS vendor, 3 respondents

- expand marketing by author, 3 respondents

- expand network coverage, 3 respondents

- lower price, 1 respondent

3.   EVALUATION OF VENDOR SUPPORT

●   As shown in Exhibit III-11, GE did not fare well in respondents' evaluations of their capabilities.   This is particularly true when it is considered that the 'Excellent' ranking for GE was obtained from a university, one 'Good' ranking was from a user, and the second "Good" ranking was from a 4-person software company (which rated Boeing and Informatics higher).

4.   PREFERENCES

●   As shown in Exhibit III-12, respondent comments on 'ideal' re-lationships with RCS vendors varied widely.

●   An exclusive relationship with one RCS vendor for all software products is generally unattractive to authors and potential authors. However, about 30% of them would find it attractive given the right terms and conditions.   Several of them stated that they recognized

-36-

EXHIBIT III-11

RCS VENDOR RATINGS

		EXCELLENT	GOOD	FAIR	POOR
TYMSHARE	MARKETING SUPPORT TO AUTHOR USER SUPPORT	1 1 1	1 1 1	 1	1
FIRST DATA	MARKETING SUPPORT TO AUTHOR USER SUPPORT		 1 1	1 	
INTERACTIVE SCIENCES	MARKETING SUPPORT TO AUTHOR USER SUPPORT			1 1 1	
CDC	MARKETING SUPPORT TO AUTHOR USER SUPPORT	 1	1 2 2	1 	
GE	MARKETING SUPPORT TO AUTHOR USER SUPPORT	1 1 1	2 2 2	3 2 1	
UNITED COMPUTING	MARKETING SUPPORT USER SUPPORT		1 1 	1 1 	
CSC	MARKETING SUPPORT USER SUPPORT	1 1 1			

EXHIBIT III-11 (CONT'D.)

RCS VENDOR RATINGS

		EXCELLENT	GOOD	FAIR	POOR
McAUTO	MARKETING SUPPORT TO AUTHOR USER SUPPORT	1 1 1		1 1	
INFORMATICS	MARKETING SUPPORT TO AUTHOR USER SUPPORT	1 1 1			
BOEING	MARKETING SUPPORT TO AUTHOR USER SUPPORT		1 1 1		
OPTIMUM SYSTEMS	MARKETING SUPPORT TO AUTHOR USER SUPPORT	 1			
NATIONAL CSS	MARKETING SUPPORT TO AUTHOR USER SUPPORT			1	 1
ITEL	MARKETING SUPPORT TO AUTHOR USER SUPPORT		 1 1		1
TOTALS MARKETING		4	7	5	7
TECHNICAL SUPPORT TO AUTHOR		4	10	2	3
TECHNICAL SUPPORT TO USERS		6	8	3	2

EXHIBIT III - 12

RESPONDENTS COMMENTS ON IDEAL AUTHOR RELATIONSHIPS

CURRENT AUTHORS

"Ownership of applications will be retained by the software supplier. RCS marketing staff should be capable of representing their product as well as the supplier."

"Each stay as autonomous as possible. RCS vendor should not pay for development."

"Prefer for the RCS vendor to handle collection and marketing."

"Non-exclusive license, supplier provides maintenance and documentation."

"RCS vendors to turn over qualified prospects and let the supplier close the deal."

"Jointly go after business that will be mutually beneficial."

"Prefer to be more involved with the marketing effort."

"Negotiate a three year contract with a guaranteed minimum revenue. RCS vendor capable of supporting data bases."

"Same arrangement as we have with GE."

POTENTIAL AUTHORS

"RCS vendor to purchase software or lease it and pay supplier 25% of the royalty."

"RCS vendor to purchase the package and pay royalties."

"Royalty payment based on usage combined with a non-exclusive fixed term contract and market product jointly."

"Supplier to have total control over product. Supplier would provide everything except running the system."

"Sell it outright and not provide technical and marketing support. Would also accept licensing arrangement with royalty payments based on usage."

"Princeton to receive a certain amount for use of the program and I and my wife (the programmers) to work for the RCS vendor on a consulting basis."

"We supply the product and the industry specialty. The RCS vendor supplies the marketing and the RCS service."

EXHIBIT III-12 (CONT'D.)

INPUT

RESPONDENTS COMMENTS ON IDEAL AUTHOR RELATIONSHIPS

POTENTIAL AUTHORS

"RCS vendor purchases the right to sub-lease and bills customers. RCS vendor pays us for use plus annual or one time fee."

"We go to user to market as RJE or for in-house sales. They market to RJE users -- are really door openers."

"Where both the supplier and RCS vendor markets product and charge users on a use basis. Want 75% of the royalty. Market by value to clients on a transaction basis."

"Non-exclusive license with royalties and up-front money."

"Non-exclusive arrangement."

"To use one RCS vendor and retain ability to sell and service product to in-house users."

"The key to success with a RCS vendor is a fruitful marketing arrangement."

"A non-exclusive license with up-front money. They pay to put it on their system and provide training. Give supplier a % override on usage."

"We have a share of on-going revenues and either a) use one vendor who has international marketing capabilities or b) use a number of vendors for market segments."

"Up-front money and pay less than 50% royalties eventually equaling the same amount if sold to an in-house user."

"We are not set up to provide services over a wide geographic area. Would expect RCS vendor to provide marketing and technical support."

"We want the RCS vendor to have at least 1 person who knows product and has the technical expertise to sell it. Want a negotiated fee plus 40% of usage royalties over resources."

that an RCS vendor would be able to give more comprehensive support

and marketing emphasis when there was an exclusive relationship.

● Again, reasons against exclusivity were that wider exposure and

additional revenues would result from having products on more than

one network.

● Authors were strongly in favor of expansion of relationships; all

those that responded favored expansion of relationships with their cur-

rent RCS suppliers and with other RCS suppliers.

5. VENDOR CHARACTERISTICS

● Most (12 out of 19) author respondents felt that they had a good

working relationship with their RCS supplier(s). Other good points

mentioned were:

- provision of nationwide network, 5

respondents

- good marketing, 2 respondents

● The two main problems identified were:

- revenues not up to expectation, 5

respondents

- poor marketing/technical support, 5

respondents

● Another problem mentioned (by a CDC author) was the high turnover

of CDC's sales staff which necessitated continual training by the

author.

-41-

•   Particular problems that authors have with GE are identified in Exhibit III-13; CAPEX and Garrett specifically asked the interviewer to mention these to GE if it was our client.

6.   AUTHORS' ADVICE TO RCS VENDORS

•   Representative comments from authors and potential authors are given in Exhibit III-14.

•   Key item is that RCS vendors should prepare better; they should know the potential market, its characteristics and user requirements.

E.   FUTURE DEVELOPMENTS

1.   REPLACEMENT OF RCS VENDORS

•   These would have to be a serious violation of the contract or the RCS vendor would have to drop support of the product in order for an author relationship to be replaced. An example of the latter is Rapidata's dropping of its IBM system which caused at least one author to change to Itel/Multiple Access. And as one respondent stated, "It is not likely we would change current vendors. It's more likely we would go to another RCS vendor with a new product."

•   Only one author respondent, a $5 million supplier of financial modelling software, would consider becoming an RCS vendor. Another respondent, INFORMATICS is already an RCS vendor and is particularly careful to avoid conflict of interest situations. This indicates that

EXHIBIT III - 13

PROBLEMS IDENTIFIED BY AUTHORS USING GE

ABC MANAGEMENT SYSTEMS	CAPEX	COMPUCON	GARRETT COMPUTER SYSTEMS
GE provides the least amount of service. Informatics and Boeing take a more active role in marketing. GE is the most expensive vendor. Do not give any discounts on computer time.	Nothing is good with the arrangement with GE. They stole our package and offer it under another name. Very greedy.	Most vendors give discounts or free computer time to authors. GE does not. Would prefer to bill customers directly. GE charges 10% of royalty for billing customer. It is difficult to get answers to technical questions. Marketing support is not up to expectations. Would be more satisfied with relationship if the vendors user rates would remain stable. GE has increased rates by 20% in the last 2 years without an increase to authors.	If the client we are doing this study for is GE, please tell them it is difficult to get them to make a decision. GE does not provide any resources, not even a discount on computer time. GE is not particulary easy to deal with. Have had a better working relationship with UCS. Would prefer to work more closely with GE as far as new business (marketing). Quality of the GE sales offices varies. Difficult to find someone in GE who can solve my problem or answer a question. Often have to call 4-5 persons before I find someone who can help.

EXHIBIT III - 14

AUTHORS' ADVICE AND COMMENTS ON RCS VENDORS RELATIONSHIPS

"Provide better marketing support, share maintenance costs and lower rates to the author for computing time."

"Contracts should state exactly what vendors and suppliers are suppose to do. Define how a product will be marketed. sales quotas expected and how much of the sales forces' time will be devoted to marketing the product."

"RCS vendors should have a good knowledge of products, price them right and provide good user support."

"Work and cooperate with supplier. Know product."

"Do homework prior to calling on a supplier. Try to understand the suppliers bargaining position."

"RCS vendors should send V-P of marketing to handle final negotiations with the supplier and not middle managers."

"Don't try and take suppliers to the cleaners."

"Vendors should not be afraid to use packages which may compete with other products on the network."

"Vendors tend to over exaggerate potential revenues of products to get suppliers to sign-up."

"Be careful of mix of products. Don't obtain too many. Sales force can't support all products."

"RCS need to show the author that they know his product and can find users for his service."

"Vendors should not select packages based on the number of CPU's they consume."

"Vendors acquire too many packages and can't provide technical or marketing support to all. Become "jack-of-all-trades and masters of none."

"We feel that RCS vendors need to establish a more systematic way of evaluating vendor supplied software. They could also make known their requirements and establish joint ventures with specialists for products which would benefit both."

"Vendors become very greedy. If a product's earnings are good, they tend to develop a similar product of their own so they don't have to pay royalties."

"We would like to understand better ways to make a more profitable relationship with RCS vendors where the relationship is not competitive."

INPUT

an RCS vendor can also be a supplier of author software.

● One potential author is considering becoming an RCS vendor on a very localized basis only.

● Therefore, there is minimal replacement business to be gained or lost in author relationships.

2. NEW BUSINESS POTENTIAL

● There is considerable business expansion potential with current authors. At least 63% (12) author respondents have other actual or planned software that could be made available through an RCS vendor.

● As explained elsewhere, these authors are not prone to exclusive relationships and therefore a major vendor (such as GE) can expand its relationships almost at will within the confines of current suppliers.

● In addition, over half (55%) the potential author respondents had software which was available for an author relationship. Some of those identified are as follows:

- Interactive graphics package

- Manufacturing packages

- Accounting system for insurance agencies

- Human resource system

- Tax management

- Credit union system

- Analytical modelling tools

- A tool used to define and document

user requirements

IV. REMOTE COMPUTING
SERVICES VENDOR
ANALYSIS

IV   REMOTE COMPUTING SERVICES VENDOR ANALYSIS

A.   IMPORTANCE OF AUTHOR RELATIONSHIPS

●   Of the seven leading vendors interviewed, five considered maintaining relationships with software suppliers as "very important." One vendor stated they would prefer to license packages rather than to develop them; another admitted they lacked applications expertise.

●   The remaining two vendors considered such relationships "important"; one vendor was putting more emphasis on developing its own products, primarily using its proprietary DBMS.

●   This company had the largest proportion (90%) of its software obtained from outside sources of all the responding companies, as shown in Exhibit IV-1. This also demonstrates that several vendors are out of balance in terms of revenues generated and share of total software that is dependent on authors.

●   All vendors expect that these percentages will change; half the respondents will obtain more packages while the others expect an increase in the share of revenues but not of the number of products. One vendor with 90% of its products from outside expected this share to decrease.

EXHIBIT IV-1

.

RESPONDENT VENDORS USE OF AUTHOR SOFTWARE

INTERVIEW NUMBER	% REVENUES OBTAINED FROM AUTHOR SOFTWARE	% OF SOFTWARE ON NETWORK WHICH IS FROM AUTHORS
RC01	20	25 [90 OUT OF 400]
RC02	10	10
RC03	25	90
RC04	< 10	75 (INCLUDES PACKAGES IN PUBLIC DOMAIN)
RC05	—	15
RC06	< 5	—
RC07	15	50

B.   CONTRACTUAL ARRANGEMENTS

●   Only one vendor, specializing in engineering and scientific services, reported that it acted as a distributor where the author provided technical and marketing support. All the other vendors provided "full services," including technical and marketing support, as well as the distributor arrangement.

●   Again, only one of the seven vendors responding did not provide any resources to the author. Almost all of them provided marketing and technical support, including the assignment of applications and system experts in one case, and free computer time: this free computer time was generally limited to development but included maintenance time in one case and installation time in another.

●   Five of the seven respondents wanted exclusive author relationships, although they all admitted that rarely happened. The other two respondents wanted 'buyout' capability. One vendor preferred to be the only company selling the package on an in-house or service use.

●   Another vendor stated that if they could not get an exclusive relationship, they had a contract stipulation that prices would not vary by more than 10% among RCS vendors.

●   Pricing to the user on the author based service is set jointly by five responding vendors, the other two handle it themselves.

-49-

● All vendors responding pay royalties based on CPU use; however, there is a movement to transaction pricing, where possible, and six respondents used this method as well. One vendor stated it has products where they pay a flat fee per month for their use.

● The average mark-up is 75%. The lowest average was 50%, and the highest average was 200%. Individual product mark-ups can range from 10% to 10,000%.

● Five of the seven respondents pay their authors 50-80% of the royalties, with an average about 65%. One vendor which emphasizes its technical and marketing skills only pays approximately 25% of the royalties to the supplier. Another vendor pays 90% of royalties on distributor arrangements and "whatever the traffic will bear" on the "full service" relationship.

● Several vendors emphasized that the level of royalty was dependent on the technical and maintenance support provided by the author.

● For one vendor, district sales offices can negotiate contracts within their area. In this case the supplier is paid 70% of royalties instead of 50% for nationwide products.

● Most royalty payments are not visible to the end user on his invoice.

● Uncollected bills are in two cases out of seven the sole responsibility of the RCS vendor. In the remaining five cases, the losses are shared by the RCS vendor and the author.

●   Again, five out of seven respondents were not charged with an annual maintenance fee. For the two that did have it, one mentioned it was $1000; the other averaged out at $2000, with a minimum at $1500.

C.   METHOD OF ACQUISITION

●   Four of the seven responding RCS vendors reported an organized search capability, as shown in Exhibit IV-2. Most vendors use their sales forces to feed back user requirements, evaluate the market need centrally, then look for an acquisition. Few make à priori decisions on what they should acquire.

●   Again, four of the seven respondents pursue software suppliers from headquarters and the field, while the other three use headquarters only. In all cases but one the headquarters function was centralized; such departments as "central planning," "product planning," and "marketing services" were used.

●   Most (five) of the respondents handle suppliers who approach them in a fairly positive, organized manner. They evaluate documentation and marketing needs; sometimes they test on the system. The other two respondents do not like suppliers to approach them.

●   The characteristics of disqualification mentioned by respondents are:

    –   "Does not meet marketing objectives"

    –   "Have competitive products on the network"

    –   "Technical problems with programs"

    –   "Financial instability of supplier"

INPUT

EXHIBIT IV-2

RCS VENDORS' RESPONSES ON FINDING SOFTWARE RELATIIONSHIPS

ORGANIZED SEARCH?	
YES	NO
"FIELD OFFICES ARE ALWAYS ON THE LOOKOUT. THEY SUBMIT REQUESTS MADE BY USERS. WHEN WE RECEIVE ENOUGH REQUESTS FROM USERS FOR A PARTICULAR APPLICATION WE TRY TO ACQUIRE THE SOFTWARE" "HEADQUARTERS AND FIELD SALES STAFF ACTIVELY LOOKING" "SURVEY MARKET NEEDS ON A REGULAR BASIS. WHEN WE IDENTIFY THAT WE NEED A CERTAIN APPLICATION WE ACTIVELY LOOK FOR SUPPLIERS" "VERY SPECIFIC PRODUCT REQUIREMENTS; WE KNOW SUPPLIERS WHO SPECIALIZE IN OUR AREAS AND TRACK THEM ON A REGULAR BASIS"	"FIELD SALES REPORTS LEADS: WE DO ACTIVELY TRY TO PINPOINT AREAS WHERE WE SHOULD HAVE PRODUCTS" "SUPPLIERS CONTACT US: WE EVALUATE AN AVERAGE OF 3 SUPPLIERS A WEEK" "FEEDBACK FROM FIELD SALES STAFF: WE CONTACT A SUPPLIER WHEN WE NEED A PRODUCT. SUPLIERS APPRAOCH US"

D.   PROBLEMS ENCOUNTERED

● All respondents reported having problems with their software suppliers; often these related to the inability of suppliers to perform maintenance or enhancements on schedule. Problems are most often encountered with small suppliers. Responses are shown in Exhibit IV-3.

E.   ADDITIONAL COMMENTS ON CONTRACTUAL ARRANGEMENTS OF RCS VENDORS

● \ "Types of exclusive and non-exclusive licensing arrangements we have are:

1. Buy software from supplier, do not pay royalties.

2. Pay some front end money and royalties.

3. Pay some front end money and royalties; the supplier supports product.

4. Supplier buys time from us and resells it to his customers. Also have brokerage agreements."

● "We try to negotiate five-year contracts. Average contract runs for three years with renewable options.

Districts can negotiate own contracts with suppliers. Suppliers receive 70% of royalties. We provide local marketing support only."

● "Basically we have one type of contract but it is always negotiable depending on suppliers' demands and how badly we want the product.

INPUT

EXHIBIT IV-3

INPUT

PROBLEMS ENCOUNTERED BY RCS VENDORS WITH SUPPLIERS

"We have numerous problems with suppliers. We receive a lot of complaints about not understanding billing procedures."

"Suppliers who have financial problems themselves. Poor system documentation and inability to complete projects."

"Not any significant problems except for one problem of not paying the correct royalty fee to one author."

"Suppliers who retain the source code and go out of business. We cannot do maintenance or enhancements. Also have problems with suppliers in getting them to do enhancements in a timely fashion."

"Most difficult problem is getting the suppliers to realize the benefits of having their product on our network, even though their share of the royalty may be less than what other vendors give. We provide good marketing and technical support of the product."

"Suppliers who don't support their customers, expect vendor to market their product and don't provide adequate documentation."

"Problems encountered generally involve maintenance: keeping the products running properly and fixing reported bugs."

INPUT

Contracts are normally written for one year with annual renewable options. We have never written a contract that exceeds three years.

All contracts contain a clause where we can drop the product if minimum revenues are not achieved for four consecutive months after the product has been on the network for six months."

● "Generally write contracts for three years. Several different "boiler plate" contracts are used. All of them are negotiated on an individual basis with the supplier.

Try to obtain source code as part of contract negotiations.

Suppliers can't make in-house sales of their product to customers who are using the product on the network.

We tend to get along very well with our suppliers."

● " We have a standard contract with variations; they are more or less negotiated on an individual basis.

Royalties paid are on a sliding scale. As the number of users increases, the less is paid to the software supplier.

We try to negotiate perpetual contracts from four to eight years. Minimum contract is one year.

If a package is discontinued, we have an arrangement with the supplier to leave it on the network so we don't lose users.

If one of the sales staff recommends that the supplier contact a user for possible in-house sale of package and the sale is made, we receive a certain percentage of the sale.

We actively work with supplier on recommending improvements to the package based on user requests."

o   "We do have a standard contract. However, 95% of the time the
contract is negotiated separately.

Sometimes we agree to share the cost of product enhancements.

No set negotiations on whether users can continue to use a
product if it is removed from the network.

Do not have any clause that states prices cannot vary more than
10% between RCS vendors if contract is non-exclusive."

o   "We have the following types of contract:

1.   Brokerage arrangement between broker and user to sell bulk
     computer time. Broker represents his company.

2.   Distributor--We bill and collect payment from customers.
     Supplier supports customer, markets and trains users.
     Month-to-month contract, 90 day cancellation clause.

3.   Full Service--provide marketing and technical support for
     product. Pay less royalties. This is a new arrangement
     and we plan to enter into more agreements like this.

If contract is terminated, we can still offer product to user.
Never negotiate fixed monthly payments to suppliers. Some non-exclusive
contracts have agreement where price can't vary more than 10% between
vendors. Contracts rarely have minimum quotas for products or sharing
of sales commission if package is sold for in-house use to one of our users."

V. ANALYSIS OF SOURCES
FOR AUTHORS

V ANALYSIS OF SOURCES FOR AUTHORS

A. <u>EASE OF ACCESS</u>

- Easiest authors to approach are the software houses and specialized processors. (Only one company refused to give us an interview.)

- Consultants are willing to discuss arrangements but are difficult to locate.

- Associations who have software are also difficult to locate. INPUT attempted to interview several associations but was unsuccessful.

- Universities are easy to access if you know who to contact, otherwise it can be a problem to find the right person.

- Government agencies have several user groups and a number of agencies who distribute software. However, they can be restrictive in releasing software to the commercial community.

B. <u>METHOD OF ACCESS</u>

- Software/specialized processing companies
  - direct contact with marketing departments.

- Consultants

  - approach principal directly; do not send a mailing.

- Associations

  - letter addressed to the Executive Director.

- Universities/Government

  - direct contact with listed source or a mailing.

- Users

  - advertise

- Recommendations from authors interviewed on how to contact potential
suppliers:

  - Refer to directories such as Datapro, ICP Quarterly, etc.
  to obtain names of suppliers and contact companies directly.

  - Obtain leads from the field sales staff.

  - Advertise that you are looking for products.

  - Attend professional meetings and hold seminars.

  - Contact associations and user groups.

  - Contact GSA and check their list of resident software.

C.   POTENTIAL VALUE

- Most valuable groups are the current authors. Next are the software
houses and specialized processors. These organizations will tend to have
good products, good documentation and the technical and marketing staffs
to support them.

INPUT

● The software available from associations and universities tends to be poorly documented and may not be easily adaptable to anybody else's computing environment. They shouldn't be overlooked and may prove very helpful. This is especially true of associations. Often they won't have software themselves but are good leads to users.

● The majority of the software available from the Federal Government is generally the result of a specific system development activity and does not have broad application to the commercial marketplace. Although the software is generally well documented, any programs of potential value would probably require some modification to adapt them to a network application. In addition, there may be some administrative difficulty encountered in obtaining the necessary releases from the government. However, the government has funded and will make available large data bases which are not available elsewhere.

D.   FURTHER WORK TO BE PERFORMED

● There is more software available than any one vendor can handle. Therefore, GE should approach the market with specific products in mind.

● GE should implement a field product identification system.

● A library function should be established to maintain
    -    a directory of sources organized by application with references to companies who have products.
    -    files of product literature arranged in alphabetical order by company name.

–   standard reference books and directories of soft-

ware (see Appendix A: Bibliography).

o   GE should also establish a contact file and maintain records on

each company approached with details of the discussion.

APPENDIX A: BIBLIOGRAPHY

APPENDIX A

SOFTWARE SOURCES: A BIBLIOGRAPHY

GENERAL REFERENCE

Consultants and Consulting Organization Directories, Gale Research Co.,
3rd ed., 1976.

Directory of Management Consultants, Consultant News, 1977.

Encyclopedia of Associations, Vol. 1: National Organizations of the
U.S., Gale Research Co., 11th ed., 1977.

DIRECTORIES

Auerbach Software Reports, Auerbach, 2 vols.

Auerbach Time Sharing Reports, Auerbach.

Bank Software Directory; an exclusive listing of software programs
designed for banks. Magazine of Bank Administration, Dec. 1976.

Business Automation Reference Service: Computer Software, Alltech
Publ., 2 vols., approx. 675 pp.

Computer Directory and Buyers Guide, published every June by Computers
and People (formerly Computers and Automation).

Computer Program Directory 1974, sponsored by Joint Users Group of the
ACM. Macmillan Information, New York.

Datapro Directory of Software, Datapro Research.

Datapro Reports on Banking Automation, Datapro Research.

Directory of Data Bases in the Social and Behavioral Sciences, edited
by Vivian S. Sessions, Science Associates International, Inc., 1974.

ICP Reference Series, Int'l. Computer Programs, 2 vols.

INPUT

Interactive Computing Directories, Association of Time-Sharing Users.

Minicomputer Software Directory, Minicomputer Data Services.

Minicomputer Software Quarterly, International Management Services, Inc.

Remotely Accessible Conversational Programs and Data Bases, Gregory Research Associates.

Software Selection, Auerbach Publishers.

Survey of Commercially Available Computer-Readable Bibliographic Data Bases, edited by John H. Schneider, et al. American Society for Information Science, Wash. DC, 1973.

Trust Software Directory, American Bankers Association.

Vendor Matrix, Hays Associates, Philadelphia.

Worldwide Directory of Computer Companies, Academic Media.

Supplement to a Proposal for a National Institute for Computers in Engineering (excellent source for engineering programs). Civil Engineering Program Applications, 600 pp. Order from:

> Joseph C. Rodgers
> Executive Secretary, CPEA
> Rodgers & Associates
> P.O. Box 1532
> Rockville, MD 20850

GOVERNMENT SOURCES

Computer Program Abstracts, U.S. Government Printing Office.

A Directory of Computer Software Applications in Energy, NTIS, 1977, PB-264200.

Directory of Computerized Data Files, Software and Related Technical Reports, NTIS, June 1976, 454 pp. SR-75/02.

National Bureau of Standards, Computer Information Section, Technology Building, Rm. B-250, Gaithersburg, MD. (301) 921-3414. Currently in the process of gathering information on software suppliers: Govt. agencies, educational groups and possibly commercial organizations. Files are open to the public.

INPUT

Software Exchange Program.

> Helen McEwan
> Software Exchange Program Director
> General Services Administration
> Automated Data & Telecommunications Service (CPSS)
> 18th and F Streets, NW
> Washington, DC 20405
> (202) 566-1120

EDUCATIONAL SOURCES

CAUSE Exchange Index: College and University Systems Exchange, Boulder, CO.

College and University Computer Sciences Administrative Directory, ACM, 1976, 94 pp.

CONDUIT. University of Iowa.

Index to Computer Based Learning, Entelek, Inc., Newburyport, MA.

Index to Computerized Teaching in the Health Sciences, Entelek, Inc., Newburyport, MA.

Software Exchange Directory for University Research Administration, Zella Co., Rothberg and Gloria R. Bolotsky. National Bureau of Standards, April 1976, NBS TN-916.

NEWSLETTERS AND TRADE JOURNALS

Computer Applications Newsletter, Gordon & Greach, NY.

Computer Programs in Biomedicine, North Holland, Amsterdam.

Computer Programs in Science and Technology, Science Associates International, Inc., NY.

Computers and Data Bases, Pergamon Press, NY.

National Computer Program Abstract Service, Wash. DC.

Software World; an international journal of computer programs and packages. AP Publications Ltd., London.

INPUT

MISCELLANEOUS SOFTWARE CATALOGS

Catalog of Programs Available to Business and Scientific Customers.
Transport Data Communication, Inc.

Abstracts of Computer Programs. Automated Procedures for Engineering
Consultants (APEC).

Compilation of Program Abstracts. Argonne National Laboratory.

Computer Program Abstracts. Hydrologic Engineering Center (HEC).

Computer Systems Index. American Association of State Highway and
Transportation Officials (AASHTO).

Directory of Computer Programs of Federal Construction Agencies.
Building Research Advisory Board (BRAB).

Electronic Computer Literary. Dept. of Transportation, Federal Highway
Administration.

Engineering Computer Program Listing. Office of the Chief of Engineers,
Department of the Army.

FACTS Program Listing. Federal Construction Council.

NISEE Program Literary. National Information Service for Earthquake
Engineering.

USER GROUPS

Burroughs Computer Users Group (CUBE)

Digital Equipment Computer Users Society (DECUS)

Federal Agencies Computer Time-Sharing System (FACTS)

Forum of Control Data Users Society (FOCUS)

General Automation Users Group (GAUGE)

Hewlett Packard Users Group

Honeywell Users Group (HUG)

ICES User Group, Inc.

NASTRAN Users Group

SHARE, Inc.

Society for Wang Applications and Programs (SWAP)

Univac Users Group (USE)

Users Group for CDC 6000 Series Machines (VIM)

INPUT

APPENDIX B: QUESTIONNAIRES

REMOTE COMPUTING SERVICE (RCS) SOFTWARE MARKETING STUDY

SOFTWARE SUPPLIER QUESTIONNAIRE

A.   QUALIFICATION OF INTERVIEWEE

1.   Are you (or your company) a developer of computer software systems
        for others to use?

        ☐ yes   ☐ no

2.   About how many software systems have you (or your company) written
        for others?

3.   What are some typical systems?

NAME OF PRODUCT	APPLICATIONS/ INDUSTRY SERVED	LANGUAGES USED	COMPUTER HARDWARE REQUIRED	ORIGINALLY WRITTEN FOR

4.   Are your systems used

        a)   Only by the users they were written for (custom) ☐ yes ☐ no

                If so, on a remote computing system

                        ☐ In-house

                        ☐ External Service

-65-

b)   By a general class of users (package) ☐ yes ☐ no

If so, on a remote computer system

☐ In-house

☐ External Service

B.   If your software is used on an external remote computer service (RCS)

1.   Which RCS is/are used?

2.   Why was it/were they selected?   (How did you establish contact?)

3.   What software is offered in this manner?

4.   What business arrangement/s do you have with the vendor/s?

5.   Does the RCS vendor/s provide resources to you?   ☐ yes   ☐ no

On what basis?

6.   When did your agreement/s start?

INPUT

7.   How long do they run?

8.   Was there a front-end payment to you or were resources
      made available to you at the front end?

            ☐ yes   ☐ no

      a)   How much was this?

9.   Is the relationship:

      a)   Vendor Name _____

            ☐ Exclusive License   ☐ Non-exclusive License

            ☐ Exclusive Outright Purchase ☐ Non-exclusive Outright
                                            Purchase

            Other (Describe) _____

      b)   Vendor Name _____

            ☐ Exclusive License   ☐ Non-exclusive License

            ☐ Exclusive Outright Purchase ☐ Non-exclusive Outright
                                            Purchase

            Other (Describe) _____

      c)   Vendor Name _____

            ☐ Exclusive License   ☐ Non-exclusive License

            ☐ Exclusive Outright Purchase ☐ Non-exclusive Outright
                                            Purchase

            Other (Describe) _____

      D)   Vendor Name _____

            ☐ Exclusive License   ☐ Non-exclusive License

☐ Exclusive Outright Purchase   ☐ Non-exclusive Outright
                                           Purchase

Other (Describe) _____

10.   What is the price of the service to the user?

11.   Who sets the charges to the end user?

          ☐ Software Supplier   ☐ RCS Vendor
          ☐ Both

12.   Who bills the user?

          ☐ Software Supplier   ☐ RCS Vendor

13.   How do you get paid?

14.   How would you prefer to be paid?

15.   If a royalty or use fee is used, what % is this of charges to
       the end user?

16.   Is this royalty visible to the user?
          ☐ yes   ☐ no

17.   Are there any restrictions in your agreement/s?
          ☐ yes   ☐ no

a)   If yes specify _____

_____

18.   What did you expect from your relationship/s?

19.   How has your experience matched your expectations?

20.   What was the role initially of the RCS vendor/s in producing or
       packaging the final product/s?

21.   What is the role now, particularly with regard to new product
       requirements and product enhancements?

22.   How is software maintenance handled now?

23.   Which way would you prefer?

INPUT

24. Who is responsible for:

	YOU	RCS VENDOR	BOTH	JOINT	COMMENT
Selling the service	☐	☐	☐	☐	_____
Supporting the service (to the customer)	☐	☐	☐	☐	_____
Preparing Marketing Literature	☐	☐	☐	☐	_____
Producing Marketing Literature	☐	☐	☐	☐	_____
Documentation	☐	☐	☐	☐	_____

25. What do you estimate is the 1977 potential market for the RCS vendor's service based on your product?

Number of users _____

Amount they would pay $_____ per year/month.

Total market $_____.

26. What growth rate per year is there?

1977 to 1978 _____ %

1978 to 1979 _____ %

27. What is your vendor's current penetration of this market?

28. How could this penetration be improved?

29. Please evaluate the assistance you receive from your RCS vendor.

	EXCELLENT	GOOD	FAIR (ACCEPTABLE)	POOR	BAD
Sales	☐	☐	☐	☐	☐
Support	☐	☐	☐	☐	☐

INPUT

Comments _____

_____

30. Please evaluate the technical support provided by the RCS vendor
     to the end user using your software.

         EXCELLENT   GOOD   FAIR   POOR   BAD
            ☐   ☐   ☐   ☐   ☐
     Comments _____

     _____

31. What is the ideal relationship with an RCS vendor?

     a)   Is the ideal relationship where you have complete customer
           control, including sales, support, bill and collection?

              ☐ yes   ☐ no

32. How important to you is continuing ownership of the system/s?

     Why?

33. Would you consider a buyout clause in any relationship?

              ☐ yes   ☐ no

34. Is an exclusive relationship with an RCS vendor for all software
     system you develop attractive to you?

              ☐ yes   ☐ no

     Why, Why not_____

     _____

35. Would you prefer:

     More relationships with the same vendor/s?   ☐

     Less relationships with the same vendor/s?   ☐

INPUT

More relationships with other vendor/s? ☐

Fewer relationships altogether? ☐

36.   What are the good points about your current RCS vendor relationship/s?

37.   What are the bad points about your current RCS vendor relationship/s?

38.   What would make you change to another vendor/s?

40.   How would you suggest an RCS vendor get in touch with potential software suppliers?

41.   Do you have any other actual or planned software that could be made available through an RCS vendor?

☐ yes   ☐ no

Specify _____

_____

INPUT

42. How important for you is it to use an RCS vendor as a distribution channel for the future?

        Very Important ☐

        Important ☐

        Not Important ☐

a)   Why? _____

        _____

        _____

43. Will using an RCS vendor provide an increasing share (revenue) of your business?

        yes ☐   ☐no

44. Would you consider becoming an RCS vendor yourself?

        yes ☐   ☐no

45. Do you have any advice for an RCS vendor

a)   To improve its chances of establishing a relationship with a software supplier?

b)   To obtain maximum benefits from a relationship?

c)   Anything else?

46.   Additional Comments

INPUT

REMOTE COMPUTING SERVICE (RCS) SOFTWARE MARKETING STUDY

POTENTIAL SOFTWARE SUPPLIER QUESTIONNAIRE

A.   QUALIFICATION OF INTERVIEWEE

1.   Are you (or your company) a developer of computer software systems
      for others to use?

                    ☐ yes   ☐ no

2.   About how many software systems have you (or your company) written
      for others?

3.   What are some typical systems?

NAME OF PRODUCT	APPLICATIONS/ INDUSTRY SERVED	LANGUAGES USED	COMPUTER HARDWARE REQUIRED	ORIGINALLY WRITTEN FOR

4.   Are your systems used

      a)   Only by the users they were written for (custom) ☐ yes ☐ no

            If so, on a remote computing system

                  ☐ In-house

                  ☐ External Service

-74-

b)   By a general class of users (package) ☐ yes ☐ no

If so, on a remote computer system

In-house

External Service

5.   Have you considered or are you considering making your software available through an RCS?

☐ yes   ☐ no

6.   If yes which one did/are you considering?

7.   Why did you choose them?

8.   If not considered, was this because you:

a)   Did not want to bother? ☐ yes ☐ no

b)   Did not know the opportunity was available? ☐ yes ☐ no

c)   Did not know how to get in touch with an RCS vendor? ☐ yes ☐ no

d)   Thought your software was not suitable? ☐ yes ☐ no
          Why? _____

          _____

e)   Other _____

          _____

9.   If you attempted to establish a business relationship with an RCS vendor and it was unsuccessful, was it because:

a)   Initial contact could not be made? ☐ yes ☐ no

b)   The RCS terms and conditions were not satisfactory? ☐ yes ☐ no

          If yes, in what way? _____

          _____

c)   You were refused the option to enter into an arrangement by the software owner or someone else?

☐ yes   ☐ no

INPUT

d)   The software was rejected by the RCS vendor?

         ☐ yes   ☐ no

e)   Other _____

_____

10.   What would make you consider a relationship with a particular RCS vendor?

a)   Ability to gain maximum income. ☐ yes ☐ no

b)   Ease in establishing a dialog. ☐ yes ☐ no

c)   Terms and conditions.   ☐ yes ☐ no

If yes specify conditions _____

_____

_____

_____

d)   Your software owner or someone else giving you the freedom to act   ☐ yes   ☐ no

e)   Other reason (specify) _____

_____

_____

11.   Rate the following licensing arrangements:

a)   A fixed fee is paid for the unlimited use of the program instead of an "availability system" where the author is paid each time the program is used?

        ☐ Preferred Arrangement

        ☐ Acceptable

        ☐ Unacceptable

b)   Licensing arrangement where the program is totally under the control of one RCS vendor?

☐ Preferred Arrangement

☐ Acceptable

☐ Unacceptable

c)   Licensing arrangement where only one RCS vendor can use
the program but it can be sold to any number of in-house
users?

☐ Preferred Arrangement

☐ Acceptable

☐ Unacceptable

d)   Non-exlusive licensing arrangement?

☐ Preferred Arrangement

☐ Acceptable

☐ Unacceptable

e)   Relationship where you have complete customers control
including sales, support, billing and collection?

☐ Preferred Arrangement

☐ Acceptable

☐ Unacceptable

12.   What do you feel would be an "IDEAL" relationship to have with
an RCS vendor?

_____

_____

_____

_____

13.   Is an exclusive relationship with an RCS vendor for all software
packages attractive to you?

☐ yes   ☐ no

a)   Why? _____

_____

_____

INPUT

14.   How important to you is ownership of the program?

☐ Very Important

☐ Important

☐ Not Important

Why? _____

_____

_____

15.   How do you prefer for maintenance to be handled?

☐ You Provide

☐ RCS Vendor Provides

Other _____

_____

16.   How would you prefer to be paid?

_____

_____

_____

_____

17.   How would you suggest an RCS vendor get in touch with potential software suppliers?

18.   Do you have any other actual or planned software that could be made available through an RCS vendor? ☐ yes ☐ no

If yes, specify _____

_____

INPUT

19.   What do you estimate is the 1977 potential market for the RCS
      vendor's service based on your product?

            Number of users _____

            Amount they would pay $_____ per year/month.

            Total market $ _____.

20.   What growth rate per year is there?

            1977 to 1978 _____%

            1978 to 1979 _____%

21.   For a service based on your software what would be your respon-
      sibility preferences?

	YOU	RCS VENDOR	BOTH	JOINT	OTHER	COMMENT
Selling the Service	☐	☐	☐	☐	☐	_____ _____
Supporting the Service (to the customer)	☐	☐	☐	☐	☐	_____ _____
Preparing Marketing Literature	☐	☐	☐	☐	☐	_____ _____
Producing Marketing Literature	☐	☐	☐	☐	☐	_____ _____
Documentation	☐	☐	☐	☐	☐	_____ _____

22.   How important for you is it to use an RCS vendor as a distribution
      channel for the future?

            ☐ Very Important

            ☐ Important

            ☐ Not Important

      a)   Why? _____

            _____

            _____

INPUT

-79-

23. Will using an RCS vendor provide an increasing share (revenues) of your business?

☐ yes   ☐ no

24. Would you consider becoming an RCS vendor yourself?

☐ yes   ☐ no

25. Do you have any advice for an RCS vendor

a) To improve its chances of establishing a relationship with a software supplier? _____

_____

b) To obtain maximum benefits from a relationship? _____

_____

c) Anything else? _____

_____

_____

_____

26. Other Comments

_____

_____

_____

_____

_____

_____

_____

INPUT

1. How important for your company are relationships between software suppliers?

2. Do you offer a distribution service where basically you act only as the billing and collection agent with some minimal local support?

3. Do you actively pursue software suppliers from headquarters or the field? If from headquarters, is this done by a central function or by various functional areas?

4. What percent of your revenues is obtained from externally written software?

5. What percent of the software that you have available to customers was generated externally?

6. Do you see either of these percentages changing over the next few years? If so, why?

7. How do you find software relationships? Is it an organized search?

INPUT

8. What are your preferred contractual relationships?

9. Who sets pricing for the services based on externally acquired software? Do you, or do your software suppliers?

10. Can your customers see on their bill how much they are paying for a particular software system?

INPUT

RCS VENDOR QUESTIONNAIRE

1. How important is it for your company to maintain relationships between software suppliers?

   ☐ very important   ☐ important   ☐ not important

2. Is your agreement with your software suppliers basically a distribution service where you act only as the billing and collection agent with some minimal local support?

   ☐ yes   ☐ no

   a. If no, specify support provided _____

   _____

   _____

3. How do you find software relationships? Is it an organized search? ☐ yes ☐ no

   _____

   _____

   _____

4. Do you actively pursue software suppliers from headquarters or from the field?

   ☐ Headquarters   ☐ Field   ☐ Both

   a. If from headquarters, is this done by a central function or by various functional areas?

   _____

   _____

5. What percent of your revenues are obtained from externally written software?

   % _____

6. What percent of the software offered on your network was obtained from outside sources?

   % _____

7. Do you see either of these percentages changing over the next few years?

☐ yes   ☐ no

a. If so, why? _____

_____

_____

8. What type of contractual relationships do you prefer to have with your software suppliers?

_____

_____

_____

9. Do you provide any resources to the software supplier?

☐ yes   ☐ no

a. If yes, specify _____

_____

10. Who sets the pricing on the software?

☐ RCS vendor   ☐ Software Supplier   ☐ Both

11. If royalties are paid to the supplier, are they based on CPU usage?

☐ yes   ☐ no

a. If yes, what is the mark-up? _____

_____

b. If no, what formula do you use? _____

_____

12. Are the royalty payments visible to the end user on his invoice?

☐ yes   ☐ no

13. What percentage of the royalty fee is paid to the software supplier?

% _____

14. How do you handle uncollected bills?

☐ RCS vendors responsibility, supplier still receives royalty

☐ Supplier is not paid

☐ Loss is shared between both parties

15. Does the software supplier charge you an annual maintenance fee?

yes ☐   no ☐

a. If yes, what is it? _____

16. Have you had any problems with your software suppliers?

yes ☐   no ☐

a. Comments _____

_____

_____

_____

_____

_____

17. How do you handle suppliers who approach you with their products? (Turn them down, some other agreement is made to look at their product, etc.)

_____

_____

_____

_____

18. What are the characteristics of disqualification?

_____

_____

_____

_____